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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/697,309	LEGNAIN ET AL.
	Examiner	Art Unit
	OSCAR A. LOUIE	2436

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 June 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4,5,13,14,16,17,19,20,23-28 and 89* is/are rejected.

7)☒ Claim(s) *3,6,7,10-12,15,18,21,22 and 29* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

This non-final action is in response to the Request for Continued Examination filing of 06/13/2008. Claims 1-29 are pending and have been considered as follows.

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1 & 16 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

- Claim 1 recites "a method of decoding MxN symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information" comprising steps and non-functional descriptive material which appears to be merely mathematical calculations and not mathematics applied to create a novel and useful structure;

> *The subject matter courts have found to be outside of, or exceptions to, the four statutory categories of invention is limited to abstract ideas, laws of nature and natural phenomena. While this is easily stated, determining whether an applicant is seeking to patent an abstract idea, a law of nature or a natural phenomenon has proven to be challenging. These three exclusions recognize that subject matter that is not a practical application or use of an idea, a law of nature or a natural phenomenon is not patentable. See, e.g., Rubber-Tip Pencil Co. v. Howard, 87 U.S. (20 Wall.) 498, 507 (1874) ("idea of itself is not patentable, but a new device by which it may be made practically useful is"); Mackay Radio &*

> *Telegraph Co. v. Radio Corp. of America, 306 U.S. 86, 94, 40 USPQ 199, 202 (1939) ("While a scientific truth, or the mathematical expression of it, is not patentable invention, a novel and useful structure created with the aid of knowledge of scientific truth may be."); Warmerdam, 33 F.3d at 1360, 31 USPQ2d at 1759 ("steps of locating' a medial axis, and creating' a bubble hierarchy . . . describe nothing more than the manipulation of basic mathematical constructs, the paradigmatic abstract idea'")*

- Claim 1 is rejected under 35 U.S.C. 101 based on Supreme Court precedent and recent Federal Circuit decisions, a 35 U.S.C § 101 process must (1) be tied to a particular machine or (2) transform underlying subject matter (such as an article or materials) to a different state or thing. In re Bilski et al, 88 USPQ 2d 1385 CAFC (2008); Diamond v. Diehr, 450 U.S. 175, 184 (1981); Parker v. Flook, 437 U.S. 584, 588 n.9 (1978); Gottschalk v. Benson, 409 U.S. 63, 70 (1972); Cochrane v. Deener, 94 U.S. 780,787-88 (1876).

An example of a method claim that would <u>NOT</u> qualify as a statutory process would be a claim that recited purely mental steps. Thus, to qualify as a § 101 statutory process, the claim should positively recite the particular machine to which it is tied, for example by identifying the apparatus that accomplishes the method steps, or positively recite the subject matter that is being transformed, for example by identifying the material that is being changed to a different state.

Here, applicant's method steps are not tied to a particular machine and do not perform a transformation. Thus, the claims are non-statutory.

Note that the mere recitation of a machine in the preamble with an absence of a machine in the body of the claim fails to make the claim statutory under 35 USC 101. *Note the Board of Patent Appeals Informative Opinion Ex parte Langemyer et al.*

- Claim 16 recites "an apparatus for decoding MxN symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information" comprising steps and non-functional descriptive material which appears to be merely mathematical calculations or computer software programs performing mathematical calculations and not an actual device which performs mathematics applied to create a novel and useful structure;

> *Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works, and a compilation or mere arrangement of data.*
>
> *Both types of "descriptive material" are nonstatutory when claimed as descriptive material per se, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994)(discussing patentable weight of data structure limitations in the context of a statutory claim to a data structure stored on a computer readable medium that increases computer efficiency) and >In re< Warmerdam, 33 F.3d *>1354,< 1360-61, 31 USPQ2d *>1754,< 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory)*

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 9, 13, 14, 16, 24, 27, & 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bottomley et al. (US-5550809-A) in view of Falconer et al. (US-5204874-A).

Claim 1:

Bottomley et al. disclose a method of decoding MxN symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information comprising,

- "for each set of M consecutive symbols, performing a first parallel code multiplying operation by multiplying the M symbols by each of the L codewords of the second set of codewords, thereby producing L first output symbols, each of the L output first output symbols being associated with one of the L codewords" (i.e. "at a transmitter, a binary information symbol b (.+-.1) can be spread by multiplying b with a spreading sequence x; for example, the spreading sequence x might be +1, -1, +1, -1, consisting of four binary chips") [column 1 lines 25-34];
- "for each of at least one codeword of said set of L codewords: for a set of N consecutive first output symbols associated with the codeword, performing a respective second parallel code multiplying operation by multiplying the set of N consecutive first output

symbols by each of the K codewords of the second set of codewords to produce a set of K second output symbols, each second output symbol being associated with one of the K codewords and with said codeword of the set of said L codewords" (i.e. "at a transmitter, a binary information symbol b (.+-.1) can be spread by multiplying b with a spreading sequence x; for example, the spreading sequence x might be +1, -1, +1, -1, consisting of four binary chips") [column 1 lines 25-34];

but they do not disclose,

- "determining an overall maximum second output symbol of the second output symbols output of said second parallel code multiplying operations," although Falconer et al. do suggest a predetermined size based on a maximum number of data symbols which can be transmitted at a certain rate, as recited below;

however, Falconer et al. do disclose,

- "The predetermined size of the block of data symbols defined by the matrix is derived from the maximum number of data symbols which can be transmitted at a predetermined chip rate within a predetermined length transmission block" [column 6 lines 10-14];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant's invention to include, "determining an overall maximum second output symbol of the second output symbols output of said second parallel code multiplying operations," in the invention as disclosed by Bottomley et al. for the purposes of data rate control.

Claim 9:

Bottomley et al. and Falconer et al. disclose a method of decoding MxN symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 1 above, but their combination do not disclose,

- "performing sequence de-repetition prior to said first parallel code multiplying operation," although Falconer et al. do suggest despreading a signal representative of the sum of signals, as recited below;

however, Falconer et al. do disclose,

- "Particular transmitted signals can be retrieved from the communication channel by despreading a signal representative of the sum of signals in the communication channel with a user spreading code related to the particular transmitted signal which is to be retrieved from the communication channel" [column 3 lines 30-35];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant's invention to include, "performing sequence de-repetition prior to said first parallel code multiplying operation," in the invention as disclosed by Bottomley et al. for the purposes of signal enhancing (i.e. desired user signal related to the particular spreading code is enhanced) [column 3 lines 38-40].

Claim 13:

Bottomley et al. and Falconer et al. disclose a method of decoding MxN symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 1 above, further comprising,

- "second parallel code multiplying operation is performed for at least 2 of the L codewords" (i.e. "In this process called "direct spreading", each spread symbol is essentially the product of an information symbol and the spreading sequence" performing a process for any/all symbols/codewords would imply that this includes any finite subset as well) [column 1 lines 25-34].

Claim 14:

Bottomley et al. and Falconer et al. disclose a method of decoding MxN symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 1 above, further comprising,

- "second parallel code multiplying operation is performed for all of the L codewords" (i.e. "In this process called "direct spreading", each spread symbol is essentially the product of an information symbol and the spreading sequence" performing a process for any/all symbols/codewords would imply that this includes any finite subset as well) [column 1 lines 25-34].

Claim 16:

Bottomley et al. disclose an apparatus for decoding MxN symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information comprising,

- "a first parallel code multiplier which, for each set of M consecutive symbols, performs a first parallel code multiplying operation by multiplying the M symbols by each of the L codewords of the second set of codewords, thereby producing L first output symbols, each of the L output first output symbols being associated with one of the L codewords" (i.e. "at a transmitter, a binary information symbol b (.+-.1) can be spread by multiplying b with a spreading sequence x; for example, the spreading sequence x might be +1, -1, +1, -1, consisting of four binary chips") [column 1 lines 25-34];
- "a second parallel code multiplier which, for each of at least one codewords of said set of L codewords, performs: for a set of N consecutive first output symbols associated with the codeword, a respective second parallel code multiplying operation by multiplying the set of N consecutive first output symbols by each of the K codewords of the second set of codewords to produce a set of K second output symbols, each. second output symbol being associated with one of the K codewords and with said codeword of the set of said L codewords" (i.e. "at a transmitter, a binary information symbol b (.+-.1) can be spread by multiplying b with a spreading sequence x; for example, the spreading sequence x might be +1, -1, +1, -1, consisting of four binary chips") [column 1 lines 25-34];

but they do not disclose,

- "wherein an overall maximum second output symbol of the second output symbols output of said second parallel code multiplying operations is selected," although Falconer et al. do suggest a predetermined size based on a maximum number of data symbols which can be transmitted at a certain rate, as recited below;

however, Falconer et al. do disclose,

- "The predetermined size of the block of data symbols defined by the matrix is derived from the maximum number of data symbols which can be transmitted at a predetermined chip rate within a predetermined length transmission block" [column 6 lines 10-14];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant's invention to include, "wherein an overall maximum second output symbol of the second output symbols output of said second parallel code multiplying operations is selected," in the invention as disclosed by Bottomley et al. for the purposes of data rate control.

Claim 24:

Bottomley et al. and Falconer et al. disclose an apparatus for decoding MxN symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 16 above, but their combination do not disclose,

- "a sequence de-repetition function adapted to perform sequence de-repetition prior to said first parallel code multiplier," although Falconer et al. do suggest despreading a signal representative of the sum of signals, as recited below;

however, Falconer et al. do disclose,

- "Particular transmitted signals can be retrieved from the communication channel by despreading a signal representative of the sum of signals in the communication channel with a user spreading code related to the particular transmitted signal which is to be retrieved from the communication channel" [column 3 lines 30-35];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant's invention to include, "a sequence de-repetition function adapted to perform sequence de-repetition prior to said first parallel code multiplier," in the invention as disclosed by Bottomley et al. for the purposes of signal enhancing (i.e. desired user signal related to the particular spreading code is enhanced) [column 3 lines 38-40]..

Claim 27:

Bottomley et al. disclose an apparatus for decoding MxN symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 16 above, further comprising,

- "second parallel code multiplying operation is performed for at least 2 of the L codewords" (i.e. "In this process called "direct spreading", each spread symbol is essentially the product of an information symbol and the spreading sequence" performing a process for any/all symbols/codewords would imply that this includes any finite subset as well) [column 1 lines 25-34].

Claim 28:

Bottomley et al. disclose an apparatus for decoding MxN symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 16 above, further comprising,

- "second parallel code multiplying operation is performed for all of the L codewords" (i.e. "In this process called "direct spreading", each spread symbol is essentially the product of an information symbol and the spreading sequence" performing a process for any/all symbols/codewords would imply that this includes any finite subset as well) [column 1 lines 25-34].

4. Claims 2, 4, 5, 8, 17, 19, 20, 23, 25, & 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bottomley et al. (US-5550809-A) in view of Falconer et al. (US-5204874-A) and in further view of Gilhousen (US-5103459-A).

Claim 2:

Bottomley et al. and Falconer et al. disclose a method of decoding MxN symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 1 above, but their combination do not disclose,

- "the first set of codewords is a Walsh code, and the second parallel code multiplying operation comprises a FHT," although Gilhousen does suggest utilizing Walsh functions and FHT in a 64-arty orthogonal signalling process, as recited below;

however, Gilhousen does disclose,

- "In the 64-ary orthogonal signalling process, the mobile unit transmitted symbols are encoded into one of 2.sup.6, i.e. 64, different binary sequences. The set of sequences chosen are known as Walsh functions. The optimum receive function for the Walsh function m-ary signal encoding is the Fast Hadamard Transform (FHT)" [column 15 lines 22-27];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant's invention to include, "the first code is a Walsh code, and the second parallel code multiplying operation comprises a FHT," in the invention as disclosed by the combination of Bottomley et al. and Falconer et al. for the purposes of efficiency/speed.

Claim 4:

Bottomley et al. and Falconer et al. disclose a method of decoding MxN symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 1 above, but their combination do not disclose,

- "the second set of codewords is a Walsh code, and the first parallel code multiplying operation comprises a FHT," although Gilhousen does suggest utilizing Walsh functions and FHT in a 64-arty orthogonal signalling process, as recited below;

however, Gilhousen does disclose,

- "In the 64-ary orthogonal signalling process, the mobile unit transmitted symbols are encoded into one of 2.sup.6, i.e. 64, different binary sequences. The set of sequences chosen are known as Walsh functions. The optimum receive function for the Walsh function m-ary signal encoding is the Fast Hadamard Transform (FHT)" [column 15 lines 22-27];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant's invention to include, "the second set of codewords is a Walsh code, and the first parallel code multiplying operation comprises a FHT," in the invention as disclosed by the combination of Bottomley et al. and Falconer et al. for the purposes of efficiency/speed.

Claim 5:

Bottomley et al. and Falconer et al. disclose a method of decoding MxN symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 1 above, but their combination do not disclose,

- "the second set of codewords is an orthogonal code," although Gilhousen does suggest utilizing Walsh functions and orthogonal code, as recited below;

however, Gilhousen does disclose,

- "The signals are also spread with an inner orthogonal code generated by using Walsh functions" [column 10 lines 6-7];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant's invention to include, "the second set of codewords is an orthogonal code," in the invention as disclosed by the combination of Bottomley et al. and Falconer et al. since Walsh functions generate orthogonal code.

Claim 8:

Bottomley et al. and Falconer et al. disclose a method of decoding MxN symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 2 above, but their combination do not disclose,

- "the first set of codewords is an 8-Walsh code, and the second set of codewords is an 8-Walsh code," although Gilhousen does suggest utilizing Walsh functions, as recited below;

however, Gilhousen do disclose,

- "The signals are also spread with an inner orthogonal code generated by using Walsh functions" [column 10 lines 6-7].

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant's invention to include, "the first set of codewords is an 8-Walsh code, and the second set of codewords is an 8-Walsh code," in the invention as disclosed by the combination of Bottomley et al. and Falconer et al. since "Walsh functions" implies any size or variant type of Walsh function.

Claim 17:

Bottomley et al. and Falconer et al. disclose an apparatus for decoding MxN symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 16 above, but their combination do not disclose,

- "the first set of codewords is a Walsh code, and the second parallel code multiplying operation comprises a FHT," although Gilhousen does suggest utilizing Walsh functions and FHT in a 64-arty orthogonal signalling process, as recited below;

however, Falconer et al. do disclose,

- "In the 64-ary orthogonal signalling process, the mobile unit transmitted symbols are encoded into one of 2.sup.6, i.e. 64, different binary sequences. The set of sequences chosen are known as Walsh functions. The optimum receive function for the Walsh function m-ary signal encoding is the Fast Hadamard Transform (FHT)" [column 15 lines 22-27];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant's invention to include, "the first set of codewords is a Walsh code, and the second parallel code multiplying operation comprises a FHT," in the invention as disclosed by the combination of Bottomley et al. and Falconer et al. for the purposes of efficiency/speed.

Claim 19:

Bottomley et al. and Falconer et al. disclose an apparatus for decoding MxN symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 16 above, but their combination do not disclose,

- "the second set of codewords is a Walsh code, and the first parallel code multiplying operation comprises a FHT," although Gilhousen does suggest utilizing Walsh functions and FHT in a 64-arty orthogonal signalling process, as recited below;

however, Falconer et al. do disclose,

- "In the 64-ary orthogonal signalling process, the mobile unit transmitted symbols are encoded into one of 2.sup.6, i.e. 64, different binary sequences. The set of sequences chosen are known as Walsh functions. The optimum receive function for the Walsh function m-ary signal encoding is the Fast Hadamard Transform (FHT)" [column 15 lines 22-27];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant's invention to include, "the second set of codewords is a Walsh code, and the first parallel code multiplying operation comprises a FHT," in the invention as disclosed by the combination of Bottomley et al. and Falconer et al. for the purposes of efficiency/speed.

Claim 20:

Bottomley et al. and Falconer et al. disclose an apparatus for decoding MxN symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 16 above, but their combination do not disclose,

- "the second set of codewords is an orthogonal code," although Gilhousen does suggest utilizing Walsh functions and orthogonal code, as recited below;

however, Falconer et al. do disclose,

- "The signals are also spread with an inner orthogonal code generated by using Walsh functions" [column 10 lines 6-7];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant's invention to include, "the second set of codewords is an orthogonal code," in the invention as disclosed by the combination of Bottomley et al. and Falconer et al. since Walsh functions generate orthogonal code .

Claim 23:

Bottomley et al. and Falconer et al. disclose an apparatus for decoding MxN symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 17 above, but their combination do not disclose,

- "the first set of codewords is an 8-Walsh code, and the second set of codewords is an 8-Walsh code," although Gilhousen does suggest utilizing Walsh functions, as recited below;

however, Gilhousen do disclose,

- "The signals are also spread with an inner orthogonal code generated by using Walsh functions" [column 10 lines 6-7];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant's invention to include, "the first set of codewords is an 8-Walsh code, and the second set of codewords is an 8-Walsh code," in the invention as disclosed by the combination of Bottomley et al. and Falconer et al. since Walsh functions implies any size or type of Walsh function.

Claim 25:

Bottomley et al. and Falconer et al. disclose an apparatus for decoding MxN symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 16 above, but their combination do not disclose,

- "the first information comprises a channel quality indication, and wherein the second information comprises a sector identifier"

however, Falconer et al. do disclose,

- "Each cell-site also transmits spread spectrum modulated information, such as cell-site identification, system timing, mobile paging information and various other control signals…a signal quality" [column 5 lines 58-62 & column 16 line 46];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant's invention to include, "the first information comprises a channel quality indication, and wherein the second information comprises a sector identifier," in the invention as disclosed by the combination of Bottomley et al. and Falconer et al. for the purposes of determining signal quality and other information.

Claim 26:

Bottomley et al. and Falconer et al. disclose an apparatus for decoding MxN symbols in which a first codeword of length N of a first set of K codewords has been spread by a second codeword of length M of a second set of L codewords, the first codeword identifying a first information and the second codeword identifying a second information, as in Claim 16 above, but their combination do not disclose,

- "the first information comprises a data rate control indication, and wherein the second information comprises a sector identifier"

however, Falconer et al. do disclose,

- "Each cell-site also transmits spread spectrum modulated information, such as cell-site identification, system timing, mobile paging information and various other control signals…a signal quality" [column 5 lines 58-62 & column 16 line 46];

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the applicant's invention to include, "the first information comprises a data rate control indication, and wherein the second information comprises a sector identifier," in the invention as disclosed by the combination of Bottomley et al. and Falconer et al. for the purposes of determining signal quality and other information.

Allowable Subject Matter

5. Claims 3, 6, 7, 10-12, 15, 18, 21, 22, & 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments filed 06/13/2008 have been fully considered but they are not persuasive.

- The applicant's arguments regarding that Bottomley et al. do not disclose or suggest "a first parallel code multiplying operation...a second parallel code multiplying operation," have been considered but are non-persuasive at this point in time;
    - Bottomley et al. do disclose, "at a transmitter, a binary information symbol b (.+-.1) can be spread by multiplying b with a spreading sequence x; for example, the spreading sequence x might be +1, -1, +1, -1, consisting of four binary chips") [column 1 lines 25-34], which suggests that each binary information symbol is spread by multiplying by a spreading sequence (i.e. set of chips "+1, -1, +1, -1")

meaning there is more than one multiplication being performed simultaneously (i.e. parallel); at the very least, it is reasonable to expect one of ordinary skill in the art at the time of the applicants' invention to utilize parallel processing as is commonly known in the art for a much faster and efficient performance gain;

- The applicant's argument with respect to "determining an overall maximum second output symbol of the second output symbols output of said second parallel code multiplying operations," has been considered but is non-persuasive at this point in time;
    - It is reasonable to expect one of ordinary skill in the art at the time of the applicant's invention to utilize maximums for managing limits for the purposes of smoothing performance of processing either in data rate or resource utilization, as is commonly known in the art;
- The applicant's arguments with respect to aspects pertaining to Falconer et al. and Bottomley et al. not teaching or suggesting the Applicants' claimed "first parallel code multiplying operation" and "second parallel code multiplying operation" have been considered but are non-persuasive at this point in time;
    - Bottomley et al. address the "parallel code multiplying operations" as explained in a previous arguments above. Both Bottomley et al. and Falconer et al. deal with the encoding and decoding of communications on a level of orthogonal (i.e. M x N) data symbols using sequences.

- The examiner suggests the amendment of dependent Claims 7 & 22 into their existing parent independent claims to better clarify that "8-Walsh code" is used and the limits of the variables "K" and "L" and "M" and "N" in addition to the resolving of the above 35 U.S.C. 101 issues; the current independent Claims 1 & 16 lack details which would clarify the scope of the applicants' invention and distinguish it from the prior art of record, as well as, what is known in the art (i.e. the independent claim limitations appear to be lacking aspects that would limit it to the applicants' believed invention of novelty and not merely any orthogonal mathematical calculations for singular/parallel codeword encoding/decoding);

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure.

a. Yung (US-6728296-B1) – similar field and some specific limitations;

b. Alisobhani et al. (US-6430212-B1) – similar field and some specific limitations;

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Oscar Louie whose telephone number is 571-270-1684. The examiner can normally be reached Monday through Thursday from 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser Moazzami, can be reached at 571-272-4195. The fax phone number for Formal or Official faxes to Technology Center 2400 is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/OAL/
01/15/2009

/Nasser G Moazzami/
Supervisory Patent Examiner, Art Unit 2436